

Beneficial Action Within Altruistic and Prosocial Behavior

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This article integrates knowledge from health psychology, life course development, and social psychology to outline a theoretical framework for identifying, investigating, promoting, and evaluating beneficial action. *Beneficial action* is defined as a subset of *prosocial* (motivated to benefit others that may include self-interest) and *altruistic* (prosocial motivation without self-interest) behavior that uses consequential (scientific) knowledge to increase freedom within the global population. Beneficial action theory seeks to increase political and social actions that are planned and evaluated to ensure key tasks in human development. Central among these is the broadening of social identity to ensure that the human potential to use science to modify the natural environment achieves benefits for the global population. This article presents a theoretical framework for conceptualizing the psychological processes that underlie the development, application and evaluation of beneficial action for individuals and populations. The need to conceptualize beneficial action arises from 3 related observations. First, the certainty of knowledge of the beneficial outcome of a specific human action increases the moral motivation to engage in that action. For example, there is consensus among psychologists and other professions that it is unethical to engage in therapeutic practices that have evidence for neutral or harmful consequences. Second, due to the rapid increase in scientific knowledge, the range of human action that has scientifically ascertainable consequences is rapidly expanding. Third, advancing scientific knowledge means that human actions have increasingly powerful consequences for humanity and the natural world, warranting careful consideration of how to ensure global population benefits.

Keywords: prosocial, altruism, human development, social identity, evidence-based practice

This article outlines a theory for improving the beneficial contribution of morally motivated human action. A theory of beneficial action is developed by integrating knowledge from the areas of health behavior theories, life course development, population sciences, social psychology, and other disciplines. Knowledge from the behavior change and population sciences is outlined to identify how human actions can be strategically planned to achieve beneficial ends. Knowledge from life course theory and developmental psychology is synthesized to present a contemporary position on the development and enactment of morally motivated behavior. In what follows specific theories and empirical evidence from the fields of positive youth development, health psychology, and international human development are also summarized.

Beneficial action theory is outlined in this article with reference to four principles (depicted in Figure 1). The principles specify how caring human action directed by consequential knowledge increases freedom within the global population.

The development of beneficial action theory has been influenced by my work as a health psychologist in the fields of public health and prevention science. My previous article (Toumbourou, 2016) outlined beneficial action theory with reference to the prevention of adolescent health and social problems and the promotion of positive youth development. The previous publication

outlined how global adolescent health issues such as international inequality and the development of adolescent risk-behavior can be reduced in the coming years by increasing investment in effective positive youth development programs that also increase active youth involvement in the dissemination of effective prevention science programs. That article (Toumbourou, 2016) described how beneficial action theory can be used in coming decades to encourage a greater number of adolescents to experience altruistic motivation to engage in effective actions to achieve prevention science outcomes, resulting in an international increase in healthy adolescent development.

In what follows, I elaborate in more detail the four principles of beneficial action theory that have been worded to enable the testable predictions (hypotheses) outlined in the final section. Given space limitations, the development of broad theory has been emphasized above specific models and detailed theories. A broad approach to theory emphasizes common fundamentals that can integrate diverse areas of knowledge. In different parts of this article, I refer to *eagle theory*, by which I mean theory that offers integration of insights from an elevated view while simultaneously maintaining acuity of detail.

The increasing sophistication of evaluation techniques for causal inference in psychology, medicine, and in the applied natural sciences, such as engineering and chemistry, places these fields in a strong position to evaluate and predict the outcomes of human action. The knowledge in these fields has moral and ethical implications. These disciplines accept a neo-positivist approach to causal inference and hence their professional ethics require human actions (behavior, interventions, and policies) to be justified on the basis of evidence-based reasoning (e.g., Campbell, 1985; Sackett,

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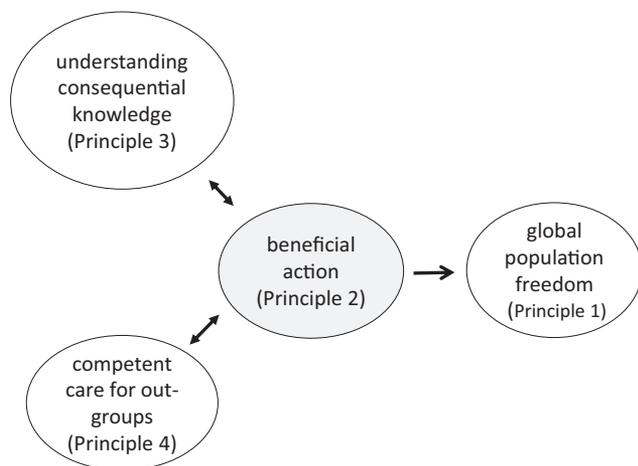


Figure 1. Beneficial action theory.

Rosenberg, Gray, Haynes, & Richardson, 1996). In the field of public health psychology, the achievement of beneficial population change in areas such as reduced tobacco use and road accident trauma has increased optimism that important health and societal advances can be made through the strategic application of psychological and behavioral science knowledge and scientific evaluation. This optimism leads to the more expansive question of whether there is the potential to replicate these advances across a broader range of applications within the field of human development (United Nations, 2008, 2015). To realize this potential, theoretical frameworks that have successfully guided applications in public health psychology and other areas of applied psychology need to be more clearly specified. In this article, these issues are examined in relation to research and theories in life-course studies, human development sciences and public health psychology.

Why Is Beneficial Action Theory Necessary?

The prominent physicist Steven Hawking recently stated that science-based threats such as genetically engineered viruses, nuclear war, and global warming “all threaten to wipe out the human race in the foreseeable future” (Knapton, 2016, p. 4). Naomi Klein (2014) also described despair and pessimism on the part of many scientists who believe that the catastrophic effects of climate change cannot be averted because the solution would require a radical overthrow of capitalism.

Beneficial action theory presents a solution by synthesizing knowledge gleaned from successful population-level behavior change interventions within public health to outline how a positive future for human and other life systems can be secured. The policy implications of beneficial action theory align with the ambitious recommendations for integrated action to establish a global movement to increase human caring capacity recently outlined by psychologists with expertise in behavior change interventions (Biglan, 2015). Beneficial action theory integrates the potential to more fully utilize the behavior change and prevention sciences to encourage human care, but is distinctive in deliberately encouraging a broadening in human identification toward global population systems, while addressing vested interests and harnessing the benefits of science.

The need to more clearly define beneficial action as a subfield of prosocial and altruistic behavior arises partly from experience in public health psychology, where prosocial and altruistic motivations have, in a number of cases, been observed to result in neutral or harmful outcomes. For example, over recent decades considerable enthusiasm and support have been maintained by prosocially motivated individuals and organizations in Australian communities to promote and support knowledge-based drug education programs, despite scientific evidence that these programs had potentially harmful outcomes in encouraging adolescent interest in tobacco use (Hawthorne, 1996). Similar problems have occurred in the United States (Ringwalt, Ennett, & Holt, 1991). Another example occurs with boot-camps and targeted group interventions for deviant youth that continue to be promoted and supported by prosocially motivated individuals and organizations despite evidence that they are ineffective or harmful (Dodge, Dishion, & Lansford, 2006). Two additional examples of strategies that are counterproductive, ineffective or less effective than alternative options, yet continue to be widely implemented by prosocial and altruistic actors with adverse impacts for large populations are as follows:

- Health care services and systems that are more expensive and less effective than available alternatives. As one example, U.S. health outcomes are poor relative to equivalent nations (Sachs, 2011).
- Reliance on aggressive military and policing interventions, incarceration and tough penalties as a means of protecting society from civil unrest, crime, violence, and antisocial behavior. These options continue to be promoted and implemented by civil society despite extensive evidence and availability of superior prevention and behavioral treatment strategy options (Toumbourou et al., 2015).

The examples presented above of cases where altruistic or prosocially motivated individuals and organizations engage in behaviors that achieve neutral or destructive outcomes raise the question as to whether behavior can be considered as altruistic or prosocially motivated when available scientific knowledge indicates the likelihood of adverse outcomes? The answer is “yes” within current psychological definitions of altruism and prosocial behavior. This is because it is motives or social consensus in anticipated outcomes that are used to define these behaviors (Penner, Dovidio, Piliavin, & Schroeder, 2005). This lack of attention to the scientifically ascertainable outcomes of behavior is understandable given that historically there has been limited potential to disentangle complex causal associations and behavioral consequences. However, evaluation techniques for causal inference have advanced considerably in psychology and other empirical disciplines in recent decades (Cook & Campbell, 1979; Pearl, 2009).

I propose a solution to this problem by distinguishing “beneficial action” as a component within prosocial and altruistically motivated behavior. *Altruism* (discussed in more detail subsequently) is defined as behavior that is selflessly motivated. Prosocial behavior (also discussed in detail subsequently) is not necessarily altruistic, but it is behavior that is motivated to benefit others. Beneficial action is a distinctive subset of these behaviors that a competent appraisal of current scientific understanding of consequences reveals to be the most likely to result in collective benefits. This article presents a strategy by which beneficial action

can be increased within prosocially and altruistically motivated behavior by more deliberately guiding this behavior to be directed by scientific evidence of beneficial collective consequences.

The rapid development of evaluation techniques for causal inference in psychology, medicine, and the behavioral and social sciences has moral and ethical implications. Ethics committees within these disciplines require professionally delivered interventions to be evidence-based. Evidence-based practice has gained rapid acceptance in the health care professions including medicine, nursing, dentistry (Sackett et al., 1996), and psychology (Campbell, 1985) since the mid-1980s.

The field of public health has a broad potential to offer benefit. With success in treating the biological causes of disease, increased attention has been paid to factors such as lifestyle, health behavior, decision making, markets, and social systems as contributors to health and well-being (Green & Kreuter, 2005). Many of the effective interventions in these areas have been based on theory and research in psychology and the behavioral sciences. Life course studies and child and adolescent intervention research has drawn attention to the feasibility of preventing disorders using human developmental frameworks (e.g., Catalano et al., 2012). The psychological, behavioral, and developmental sciences have played an important role in these areas. The field of prevention science is establishing strategies to reduce major health and social problems that threaten the future for the current generation of children and young people (Catalano et al., 2012).

A number of developments in public health and health psychology suggest the need to identify and conceptualize beneficial action as a specific field that can guide the endeavors of the prosocial and altruistically motivated. First, the analysis of observational and life-course research has enabled life-course patterns and specific behaviors to be identified in terms of their consequences for healthy development. Studies of this type have more clearly specified beneficial actions by producing health behavior guidelines (O'Malley & Wagenaar, 1991) and parent education materials (Toumbourou et al., 2014) advising on specific behaviors that are recommended to increase the probability of healthy outcomes. Second, intervention studies have investigated the effectiveness of different strategies and actions that can increase adherence to health behavior guidelines and encourage healthy outcomes. The review of these studies has increased understanding of principles of action and behaviors that parents, professionals, and young people can adopt to contribute to individual and collective health and well-being (Aos et al., 2011; Catalano et al., 2012; Toumbourou et al., 2014). Third, efforts to encourage behavior change in large populations have generated understanding of the reciprocal relationships between actions within complex systems. Studies of this type have clarified that altruistic and prosocial motives can give rise to behaviors and policies that have varied outcomes (e.g., Toumbourou, 2016; Toumbourou et al., 2014). Efforts to encourage beneficial population change in complex systems has also identified the importance of actions to ensure healthy systems by supporting constructive and transparent governance, disseminating scientific findings to ensure accurate public awareness (Brown et al., 2014; Hawkins et al., 2009, 2012, 2014), and overcoming barriers posed by vested interests (Sachs, 2011).

Altruism, Prosocial Behavior, and Global Population Freedom

Altruism is commonly defined as the motivation to engage in behavior that benefits others without regard to self-interest. In more complex terms, altruism can be conceptualized as voluntary behavior enacted to benefit another and motivated by values related to concerns for others as opposed to hedonistic social rewards and punishments (Eisenberg & Mussen, 1989). Altruistic behavior can range from actions that involve little sacrifice for the actor (e.g., advocating foreign aid) through to those that hold potential for life-threatening personal consequences (e.g., volunteering to care for Ebola victims).

The view that altruism does not exist is a long held position within the egoistic traditions in philosophy and the social sciences. In philosophy, egoists such as Hobbes have argued that altruistic motives are self-interested to enhance social esteem and avoid unpleasant personal experiences. The view that motives are self-interested is a well-accepted tradition in psychology (e.g., Grant, 1997) and in theories of prosocial behavior (Dovidio, Piliavin, Gaertner, Schroeder, & Clark, 1991).

In contrast, biological, social, psychological, and cognitive neuroscience studies in recent years have provided more convincing evidence that altruistic motivation exists and is quite widespread. Wilson (2015) summarized the biological evidence for altruism and its functional evolutionary advantage in nonhuman and human groups.

Laboratory experiments in social psychology have provided evidence contradictory to the predictions of egoist theories. These studies have shown that in experimental conditions that encourage feelings of empathy, participants provide assistance regardless of whether their actions are anonymous or increase their own discomfort (Batson, 1998, 2011). For example, participants are willing to assist a person being exposed to painful electric shock regardless of whether their assistance is anonymous and involves them receiving the shock (e.g., Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983).

Although it is plausible that respondents in the aforementioned laboratory experiments act to avoid feelings such as guilt and shame, neuroscience findings suggest that altruism in humans is related to neurocognitive pathways associated with healthy social information processing, empathy, and attachment. Functional MRI reveals that decisions to provide charitable donations trigger brain circuit activity typically associated with social attachment and bonding (Moll et al., 2006). Randomized assignment of adolescents to prosocial volunteering has been shown to have physical health benefits (Schreier, Schonert-Reichl, & Chen, 2013).

In addition to being integrated in healthy neurological functioning, a component of altruism also appears to be genetically inherited. Twin studies suggest that altruism has a small to moderate genetically inherited component of between 20% (Cesarini, Dawes, Johannesson, Lichtenstein, & Wallace, 2009) and 50% (Rushton, Fulker, Neale, Nias, & Eysenck, 1986) and has been recently observed in behavioral studies as associated with genetic allele variation (Avinun et al., 2011).

Why should altruism be a component of human and nonhuman populations? One answer can be found in the analysis of human behavior based on systems theory (Wilson, 2015). Within systems theory (von Bertalanffy, 1968), individual be-

havior is understood in terms of its relationship to a greater social aggregate of behavior interacting with wider populations and with the natural world. The biologist Wilson (2015) argued the evolutionary advantage in human organizational systems of behaviors and policies that have the effect of benefitting the whole population. Later sections of the present article further discuss two areas that are argued to increase prosocial and altruistic behavior within human systems. These involve increasing: social identification with system components; and understanding of the consequences of altruistic actions for life systems.

Altruism not only increases the survival advantage for the group but it also has important implications for increasing the freedom of individuals within the group. Beneficial action theory is explicit in emphasizing the advance of human freedom as a key task of human development. The view that advancing human freedom is a key task of human development is explicit in theories guiding major social movements within: politics, law, and human rights (Moyn, 2010); economics (Friedman & Friedman, 1990); and international human development (Sachs, 2005). Respect for human rights and freedom of choice are central tenets guiding the professional application of psychology (American Psychological Association, 2010). In preparing for the coming decades where human actions will have increasing influence on life systems and the natural world, beneficial action theory broadens the perspective by arguing that increasing freedom is a key task common to both humanity and all forms of life. To advance these ideas, a definition of freedom is first offered as Principle 1.

Principle 1. Freedom is the range of behavior that an organism is able to choose and enact after accounting for genetic and environmental determination.

Within this definition, freedom is the defining feature that separates living organisms from nonliving matter. The actions of nonliving matter are completely determined by natural laws. Lower organisms have limited freedom to determine their actions, whereas higher organisms are characterized by the highest range of freedom. In common with lower life forms, freedom of higher organisms is extended when life can be sustained for longer periods and across a wider range of environmental conditions. Freedom is extended by genetic phenotypes that allow an organism greater mobility and capacity to address territorial threats. In lower life forms, freedom applies to a single organism, a species, and the future progeny of the species. Within the historical advance of human societies, freedom struggles have initially centered on overcoming economic and political barriers (Moyn, 2010). Progress in these areas has enabled the advance of cultural and creative freedoms that have reciprocally influenced technological advances (Bernal, 1971).

Since the Enlightenment, science has played a more pivotal role in extending human freedom by reducing natural barriers (e.g., solutions to problems arising from flood, fire, drought, and famine). At its highest levels, freedom provides opportunities for humans to satisfy psychological needs for self-determination and autonomy (Ryan, Huta, & Deci, 2008), identify their strengths, act on these, and consequently flourish (Seligman, 2011) and optimize human potential.

By encompassing nonhuman populations, Principle 1 presents freedom as one criterion for evaluating genetic and environmental interventions. I propose an index of human freedom based on five existing indicators of individual and population health: length of life and days without disability (Murray & Lopez, 2013), positive mental health (Kern, Waters, Adler, & White, 2015), economic freedom (Sachs, 2005), human rights (Freedom House, 2015), and the realization of individual talents (Csikszentmihalyi, 1990) in productive activities to achieve population freedom.

Prosocial and altruistic behaviors, regardless of their motives, vary in their likelihood of leading to beneficial consequences for others. Although consequences of actions have been considered in efforts to define prosocial behavior in biological theories of species selection, there has been a lack of attention in psychological, behavioral, and social research to the benefits of altruistic and prosocial behavior to the welfare of others (Wilson, 2015).

In the present article, I conceptualize the aspects of human prosocial and altruistic behavior that are guided by consequential knowledge to contribute to collective freedom as *beneficial action*. Beneficial action is further defined in the next section.

Beneficial Action

Melinda Gates announced in 2011 that, after a period of vexed consideration, she had made the decision to act in contradiction to her Catholic faith by advocating for contraception (Moorhead, 2012). This decision was made on the basis of evidence for the international benefit of the use of contraception. Ms. Gates had moved from altruistically inspired action to what I term *beneficial action* (altruistic behavior that is informed by scientific evidence).

It might be suspected that the purpose of presenting this example is to negate or diminish faith-based, religiously, and ideologically inspired prosocial behavior within the field of psychology. This is not my intention, and it is relevant to state at this point that I hold an explicit Christian faith that I consider to be reconciled with science. My reconciliation is based on seeking the eagle theory or broad view, whereby religion and science hold a common purpose in offering theories of how to understand and advance human progress.

Not all activity in the name of science stands the test of advancing global population freedom explicit in beneficial action theory. However, if *science* is defined as the disciplined study of consequential knowledge, then it offers a means of comparatively evaluating and refining activities that advance freedom.

In my view, many religious practices can withstand evaluations to be shown to contribute to beneficial action. The scientific study of religious practices such as meditation, forgiveness, optimism, prayer, marriage, empowering the disadvantaged, generosity, community affiliation, and reacting with love for enemies reveal many of these practices to be enhancing of health and global population freedom (e.g., Levin, 1996; Seligman, 2011; Seybold & Hill, 2001).

The concerted scientific study of beneficial actions provides a basis for a selection and sorting of religious practices to identify those that have evidence of achieving benefit and those that may be neutral or harmful. Religious theory has also played an important role in leading the aspirations of scientists, by challenging and extending understanding of the human potential.

Evaluations of the ethics or morality of action are greatly influenced by consideration of the consequences of such action. This is evident in ethical frameworks for professions, for example in psychology, where professional competence in achieving therapeutic benefits is fundamental ([American Psychological Association, 2010](#)). Within legal systems, penalties are commonly attached to harmful human actions that neglect or ignore potential consequences, with more severe penalties exacted where motivations show clear knowledge of likely harm that indicate intent.

Therefore, I propose the following:

Principle 2. Beneficial action is prosocially and altruistically motivated behavior that uses consequential knowledge to increase freedom within the global population.

Beneficial action is thereby defined to be similar to altruistic behavior in that it is motivated to benefit others, while putting aside self-interest. However, it also emphasizes the use of consequential knowledge in the advancement of freedom within a population. Including the term *population* in this definition recognizes the considerable advances that have been made within psychology, public health, epidemiology, and biology in conceptualizing and evaluating the dynamics of change in whole population systems. These fields recognize that achieving change at a human population level may be the product of differential effects within and interactions between subpopulations such as minorities identified based on race, ethnicity, culture, or due to disadvantage ([Toumbourou et al., 2014](#)). The future characteristics of any population are influenced by predictable demographic patterns associated with the lifecycle of birth, procreation, and death and through migration. Hence, these issues are active considerations in ethical debates regarding population freedom.

Modern technology has advanced the capacity for international communication and travel while also leading to threats, such as human-induced climate change, global disease pandemics, and international terrorism that can only be tackled through international cooperation. The emphasis on the “global population” in Principle 2 acknowledges the need for altruistic actors to consider the implications for freedom for human populations internationally and for nonhuman populations in efforts to define beneficial action.

Beneficial action theory also recognizes the need for human action to be ethically guided by considerations of nonhuman populations. Principle 1 recognizes that advancing freedom is an important principal guiding ethical decisions regarding both human and nonhuman life. Similar to human populations, in plant and animal populations, indicators of freedom include length of life (capacity to survive through time); movement choices (capacity to orient through space); diversity in survivable habitat; and ability to exploit the environment to meet needs and survive threats. In addition to guiding considerations in human populations, Principle 2 offers a measurable basis for evaluating ethical decisions relevant to nonhuman plant and animal populations. Although beneficial action theory does not diminish the complexity of ethical decisions, it provides a basis for evaluating human manipulation of the genetic basis of life. Principle 2 argues that ethical actors should seek to understand and evaluate the consequences of interventions, including genetic modifications for the goal of increasing global population freedoms.

There has been important intellectual progress in determining how beneficial human outcomes can be defined and encouraged. An explicit agreed task of the social and behavioral sciences is to provide an understanding of how human behavior can achieve goals of collective benefit, improve material conditions and enhance health and well-being internationally ([United Nations, 2008, 2015](#)). Scientists from many fields have become increasingly preoccupied with charting and forecasting future trends and their implications for human activity. Prominent examples include: international development; public health; economics; psychology; and the environmental sciences.

Beneficial action is not simply a culturally relative or Western perspective but seeks to advance global population freedom ([Toumbourou, 2016](#)). In the international development field, global cooperation organized around the United Nations Millennium Development Goals, informed by scientific knowledge in economics and public health, has advanced human freedom by reducing maternal and infant deaths and increasing education and human rights ([United Nations, 2014](#)). Public health goals have been successfully addressed in modern nations to increase life expectancy and days free of disability. The application of economic theory has enabled steady improvements in the human condition ([Sachs, 2011](#)) such that fewer people within the global population now live constrained by life-threatening poverty ([United Nations, 2014](#)).

Consequentialist Knowledge and System Freedom

Throughout this article, I argue a strong consequentialist philosophical position. Consequentialist moral philosophy can be contrasted with other approaches that emphasize moral actions as primarily ordained through societal norms or human self-awareness ([Sinnott-Armstrong, 2014](#)). I argue that consequential learning to identify beneficial action is an important impetus for the achievement of human potential. In overview, the form of consequentialism I argue is summarized in Principle 3 below.

Principle 3. Experiencing (directly or indirectly) the consequences of action is a primary means by which all living organisms learn to restrain their individual freedom to increase freedom at the population level. Systematizing consequentialist knowledge advances freedom in human populations.

Consequential learning is an important mechanism driving moral development ([Bandura & McDonald, 1963](#); [Catalano & Hawkins, 1996](#); [Skinner, 1953](#)). From this perspective, primitive moral behavior can be observed in the most basic forms of life in rules for engaging with other organisms. Even basic organisms have the task of responding to other organisms on the basis of classifying them as food, friend, or foe. Higher life forms extend their freedom by developing more complex moral considerations.

As human societies have become more complex it has become increasingly difficult to predict what consequences will follow individual or collective actions. System complexity introduces long chains through time and space between an action and its consequences. Long and complex consequential chains can make it difficult to work out what, if any, contribution a specific action made to the resulting consequence. With sufficient distance between actions and knowledge of consequences, moral development

can become stifled, distorted, and unrealized. Where the link between actions and consequences is clarified, human moral choices are clearer, and morally guided behavior increases.

An important assumption of beneficial action theory is that, although altruistic motivation is fundamental to healthy human development, complexity barriers diminish the expression of altruistic behavior. Where public health research has been able to penetrate through complexity and establish causal evidence for a policy consequence, the public and the legislature become more amenable to that policy being implemented (Toumbourou, 2016; Toumbourou et al., 2014). Within the applied areas of psychology related to health, there is considerable agreement as to how to achieve a causal understanding of program and policy effects (Toumbourou et al., 2014). An important development in recent decades is the emergence of integrative scientific review organizations that synthesize and disseminate this information.

The Cochrane Collaboration (www.cochrane.org/) was initiated in the United Kingdom in 1993 to synthesize and disseminate conclusions from high-quality evaluation studies in the health sciences. The collaboration provides a repository of randomized controlled trials and completes “Cochrane Reviews” that systematically search and synthesize intervention and observational studies to present conclusions regarding the level-of-evidence for the potential for health interventions and policies to reduce health problems and improve human health outcomes. The Cochrane systematic literature reviews have made possible the integration of complex information to enable conclusions regarding the likely benefits of therapeutic practices. Similarly, the Campbell Collaboration (www.campbellcollaboration.org/) has been instigated to review information and synthesize policy conclusions in the social and behavioral sciences.

In recent decades, impressive examples of scientific review frameworks informing political decision making have emerged. Effective work aligning state policies with causal scientific theory has been undertaken and is ongoing in the United States. For example, the Washington State Institute for Public Policy provides advice to the Washington State Legislature by using a unique investment portfolio model that enables comparison of the economic return for varied program and policy options (www.wsipp.wa.gov; Aos et al., 2011). A complex range of scientific information has been made comprehensible to nonexpert audiences as a result. The work of organizations such as the Cochrane and Campbell Collaborations and the Washington State Institute for Public Policy is premised on the assumption that programs and policies are more likely to be implemented where they have strong evidence for their effectiveness (i.e., greater certainty of achieving a beneficial outcome).

An example of the proposition that more certain knowledge of beneficial action outcomes contributes to a social and political imperative to adopt that action comes from the successful public health movement to create tobacco smoke free areas. This involved a strategic effort led by anticancer organizations and supported by prominent health psychologists in Australia and in other parts of the world. The development of a causal understanding of the harmful effects of environmental tobacco smoke was followed by scientific efforts to identify effective policies to reduce exposure (Hopkins et al., 2010). These efforts were accompanied by actions to understand vested interests and influence political decisions by answering political objections. Actions in this phase included

conducting public opinion surveys and efficacy studies (Gorini, Chellini & Galeone, 2007) and evaluating consumer perceptions and the economic impact of smoke-free policies on businesses such as cafés, bars, and clubs (Eriksen & Chaloupka, 2007). These efforts to establish science-based policies were challenged by vested interests in the tobacco industry whose sponsorship of biased research was then exposed by public health advocates (Scollo, Lal, Hyland, & Glantz, 2003). Campaigns to rally political and public support were ultimately successful in having smoke-free areas introduced widely across Australia and in many places internationally (Hopkins et al., 2010), despite continuing resistance from vested interests. The environmental tobacco policy experience exemplifies the importance of deliberately encouraging movement beyond prosocial and altruistic motivation to adopt beneficial action.

Levels of evidence for causal theory can be specified in terms of the breadth (eagle theory level) and the number and range of tests. Theories with the highest level of evidence cover a broad range of human experience and are supported by extensive testing of empirical implications. Five key indicators that can be monitored to measure how individuals and human populations are progressing in their capacity to achieve insight and motivation from consequential knowledge are the maximization of educational engagement and achievement (United Nations, 2014), healthy child and youth development (Hawkins et al., 2011), creative and risk-taking culture that is able to forgive and reflect on mistakes as valuable learning opportunities (Argyris, 1999), individual and political decisions informed by indicators and advice from unbiased institutions that synthesize systematic reviews and scientific consensus statements (Aos et al., 2011; United Nations, 2008), and individual and political support for media that disseminates consequential knowledge and exposes the efforts of vested interests to disguise such knowledge (Reporters Without Borders, 2014).

The Development of Altruistic and Prosocial Motivation and Behavior

In the text that follows, I outline how altruistic and prosocial motivation develops and is translated into action. The development of both altruistic and prosocial behaviors are considered along with factors that inhibit the development of antisocial behaviors. This overview is necessarily selective and briefly summarizes what is known of biogenetic, developmental, and situational—contextual influences. This review includes studies that my research team have conducted.

Through history the overcoming of rule by physical force to enable the development of societies that respect human rights has been a dominant theme (Moyn, 2010). In contemporary political analyses, the progress of nations in establishing parliamentary democracy and institutional structures to protect legal and human rights are assessed in the Failed States Index (Fund for Peace, 2014). Characteristics of failed states include the arbitrary use of violence by state organizations and a large percentage of the population engaged in or threatened by violence and antisocial behavior.

A novel aspect of beneficial action theory is the recognition that the identification of population boundaries plays a central role in prosocial and antisocial behavior. Prosocial behavior is typically directed at assisting trusted and familiar (in-group) populations,

whereas antisocial behavior is more likely to be enacted against feared or unfamiliar (out-group) populations (Tajfel & Turner, 1986). The boundaries of in-group populations that human beings have identified with have expanded through history (Singer, 1981). Historically, the identified in-group population was smaller, expanding from the family and tribe, to progressively incorporate the town, church, state, and nation (Bernal, 1971). With modern global communication and rapid travel and international economic relationships, the most progressive modern institutions emphasize prosocial motivation to strategically assist an internationally inclusive population (United Nations, 2008, 2015).

The modern challenges to human survival, such as international pandemics, terrorism, war, and human-induced environmental degradation must increasingly be tackled through international cooperation. I argue that to achieve progress in these areas, a more deliberate psychological transformation is required to assist people to actively confront and control the primitive human tendency to consider unfamiliar out-group populations as enemies. This priority is outlined in Principle 4.

Principle 4. Competition, conflict, and violence limit the freedom of all living things. Freedom within the global population will be increased by human populations adopting caring actions that successfully develop social bonds with out-group populations.

Principle 4 recognizes that there is increasing knowledge as to how care-motivated actions can successfully develop trust and social bonds with out-group populations. Out-group populations are defined due to being unfamiliar, having characteristics distinct from identified others and/or being distrusted (Toumbourou, 2016). The social development model (SDM; Catalano & Hawkins, 1996) is an integrative theory of the development of human social bonding and identification. The model has been successfully used to design interventions that have improved the economic mobility of disadvantaged minorities and reduced antisocial and violent behavior (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005). The theory integrates human behavior and attachment research and synthesizes findings from longitudinal and intervention studies relevant to the development of prosocial and antisocial bonding and behavior. The SDM posits that when a relationship is characterized by skills to negotiate required social conventions and offers opportunities and reinforcement, a social bond develops. Once strongly established, the social bond can independently affect behavior through efforts to conform to norms and conventions. The model recognizes that life transitions in preschool, elementary school, secondary school (Catalano & Hawkins, 1996), and in the postschool transition (Toumbourou et al., 2014) introduce different socializing agents (family, school, peer group, community, workplaces) that may compete for social bonds and hold differing norms for antisocial behavior (e.g., overtures from criminal gangs) and prosocial interaction with out-groups (e.g., organizations encouraging youth volunteering).

In emphasizing the development of social bonds with out-group populations, Principle 4 recognizes that freedom is increased through actions that reduce conflict by overcoming the tendency to perceive out-group populations as threats. The importance of psychological practices that challenge the primitive tendency to per-

ceive out-group populations with hostility have long been emphasized in religious teachings: Buddhists have advocated “my enemy is my teacher,” whereas Christ advocated “love your enemy.” Although this specific teaching of Christ to love your enemies is referenced as an important ethical principle, even by atheist ethical philosophers (Singer, 1981), there has been no empirical attention examining the consequences of its adoption for individuals and populations. Principle 4 is stated in a form that enables the testing of a scientific proposition. Hence, beneficial action theory offers the novel empirical prediction that psychological practices that contribute to extending the population boundary of human love and care will contribute to advancing global population freedom in human and nonhuman populations.

Studies in the field of health psychology make clear that it is better for both our individual and collective health to care and love rather than hate. Thoughts and emotions associated with hate (hostility and anger) have negative consequences for human physical health (Jackson et al., 2007), while thoughts and emotions associated with love and care (social connectedness, attachment, and trust) have positive health consequences (Hawkins et al., 2012; O’Connor et al., 2011).

How external social groups are appraised is a critical determinant of prosocial or antisocial behavior toward them (Batson, 1987; Tajfel & Turner, 1986; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Social–emotional competence training assists in reducing antisocial behavior (Domitrovich, Cortes, & Greenberg, 2007) by developing skills in actively identifying, critiquing, and controlling the innate and primitive human tendency to consider external social groups with hostility. Increasing the percentage of the population who adopt effective strategies to care for and love those otherwise perceived as enemies is currently a neglected public policy goal. Efforts to achieve this at the individual and population level can be evaluated by five key indicators: secure child attachment and prosocial bonding pathways (Catalano & Hawkins, 1996; Center on the Developing Child, 2010); social–emotional competence (Domitrovich et al., 2007); social trust (Hawkins et al., 2011); valuing of cultural diversity (Larke, 1990); and adoption of active global citizenship (Norris, 2001; Toumbourou, 2016).

In a previous article (Toumbourou, 2016), I summarized how developmental stress and deficits in early life lead to antisocial behavior associated with physical and neurocognitive disabilities, insecure social attachments, and low emotional competence. That article also noted evidence that altruistic and prosocial motivations emerging in adolescence and adulthood are the product of healthy physical and psychosocial development at earlier points in the life course. The sections that follow briefly overview commonalities in developmental and situational influences on antisocial behavior and on prosocial and altruistic motivation.

Developmental Influences

The population distribution of antisocial behaviors tends to show distinct subgroups across the life-course. Most adults engage in no or low levels of antisocial behavior. Longitudinal life-course studies typically identify antisocial subgroups comprised of child-onset and adolescent-onset groups (Smart et al., 2003). Moffitt (1993) described these antisocial behavior subgroups as life-course persistent and adolescent-limited.

Analyses of a large Australian longitudinal study indicated that adults who have low or no antisocial behavior can be further distinguished by the extent they are prosocial (Hawkins et al., 2011). Most people have low levels of both antisocial and prosocial behavior (O'Connor et al., 2011), although for the most part prosocial characteristics, such as social trust and civic engagement, do not overlap with antisocial behaviors.

Although human antisocial behavior and cruelty have been argued to have primitive evolutionary and neurological underpinnings (Nell, 2006), there is increasing evidence that altruistic and prosocial inclinations come to dominate antisocial impulses as a product of healthy human development. Both prosocial and antisocial behaviors are evident in the early years of childhood. From their first year of life, children begin to display prosocial behavior such as sharing (Parke, Gauvain, & Schmuckler, 2010); and by their second year, they are able to articulate moral theories and concepts of fairness and helping (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). More complex prosocial reasoning and behavior emerges with age and cognitive maturity (Bouchard, Cloutier, Gravel, & Sutton, 2008). Antisocial behaviors such as violence, destructive behavior, lying, cheating, and rule-breaking are commonly observed in the early childhood years, whereas more complex antisocial behaviors such as coercion and planned criminal offending arise in later stages for a minority (Smart et al., 2003). Under healthy developmental conditions children develop self-control over impulsive antisocial tendencies such that by late childhood and into adolescence most show no or low antisocial behavior (Smart et al., 2003).

Childhood exposure to intense negative experiences (such as child maltreatment) undermines healthy attachments (Bowlby, 1965) and leads to the extended arousal of the nervous system, which releases developmentally destructive stress hormones such as cortisol. In turn, these exposures can result in permanent biological and neurological damage, impairing the function of stress arousal, immunity systems, and physical development (Middlebrooks & Audage, 2008). Neurodevelopmental impairments can lead to child behavior problems that can increase antisocial behavior (Center on the Developing Child, 2010) and reduce the capacity for the complex social information processing entailed in prosocial behaviors (Penner et al., 2005). In contrast, early child development characterized by secure child social attachments, healthy nutrition and cognitive stimulation set the foundations for healthy neurocognitive development (Center on the Developing Child, 2010).

A range of biological and social system indicators suggest that antisocial behavior should be classified as a failure in healthy human development. First, adult hostility, aggression, and violence are known to lead to destructive individual physical health consequences, including impaired cardiovascular and immune functioning (Jackson et al., 2007). Second, these behaviors impair social systems through negative physical and psychological consequences for victims in the communities and social networks affected by these behaviors (Hemphill et al., 2011). Third, these behaviors have destructive intergenerational consequences for the development of children exposed to aggressive discipline, abuse, family conflict, and community violence (Toumbourou et al., 2015).

Situational and Contextual Influences

Situational and contextual influences are well documented in models of the development of both antisocial and prosocial behaviors. Antisocial behavior increases in situations in which the consequences are poorly understood, apprehension and penalty are calculated to be unlikely, and where there is group expectation and pressure to enact antisocial behavior (Birkbeck & LaFree, 1993). Social information processing plays an important role in contextual influences on prosocial and antisocial behavior. A significant barrier to prosocial behavior is the cognitive complexity of contextual judgments and decisions such as what assistance is required, whether others are likely to act, and whether intervening will result in beneficial consequences (Penner et al., 2005).

Australian longitudinal analyses of positive young adult development reveal social trust to be an important characteristic associated with prosocial behavior (Hawkins et al., 2011). This is in line with analyses that reveal social identification plays an important role as a contextual influence on prosocial and antisocial behavior. Where others are perceived to be part of one's identified social group, prosocial behavior is more likely to occur (Tajfel & Turner, 1986). Experimentally increasing social exclusion has been demonstrated to decrease prosocial behavior (Twenge et al., 2007). Batson (1987) theorized that feeling empathy toward the individual or group needing aid increases the likelihood that the aid will be given. Feelings of empathy are known to be stronger toward those one has a close relationship with and identify to be part of one's in-group.

The Development of Beneficial Action

Beneficial action theory argues that prosocial and altruistic motivation is necessary but not sufficient to enable beneficial action. Beyond factors that influence the development of prosocial and altruistic motivation, the development of beneficial action also requires competent cognitive analysis and successful strategic planning and execution of intended actions to achieve intended outcomes, scientific competence, the valuing of global population freedom, and skill in identifying and overcoming vested interests.

Competencies for cognitive analysis include retrieval and synthesis of relevant information and critical thinking to evaluate conclusions regarding probable action consequences. Successful execution of intended actions includes efforts to evaluate consequences and use corrective feedback (Miller, Galanter, & Pribram, 1960) to achieve intended beneficial outcomes.

The planning and execution of beneficial actions for a global population are heavily influenced by social identification and appraisal. Children who experience secure attachments and family harmony in their childhood (Bowlby, 1965) and who feel valued and engaged through their school years grow up with greater feelings of social trust (O'Connor et al., 2011) such that their moral considerations are less parochial and more empathically considerate of the interests of a complex global population (Toumbourou, 2016).

Increasing beneficial action requires that leaders and citizens as students and learners develop competencies and institutional structures to promote social trust and academic and scientific reasoning. The sections that follow take a developmental perspective and examine influences in the early years, preschool, elementary, and

secondary school periods that may result in prosocial and altruistic motivations articulating into beneficial action.

Prebirth and Early Years Influences on Beneficial Action

Although the majority of people in society have benefitted from modern economic growth, progress has been uneven such that the gap has increased between the richest and poorest members of the global population (Sachs, 2011). For some decades in Australia and across the developed world, abler individuals and affluent families raising children have moved to neighborhoods that have better employment options, better resourced schools, and more amenable communities (Toumbourou et al., 2014). These trends have meant that those with low economic freedom have been left behind in disadvantaged communities where destructive childrearing practices, such as tobacco and alcohol use during pregnancy, and family violence can be normalized and reinforced (Toumbourou et al., 2014). These geographic mobility trends result in families and children in the developed world growing up in vastly different social environments. Children growing up in safer and more secure environments experience more optimal underlying conditions to develop prosocial and altruistic motivation. However, if they have little experience or skill in understanding and addressing the conditions of families and children growing up in disadvantage and insecurity, it is unlikely that their altruistic motivation will convert to beneficial action.

One way to change outcomes for families and children growing up in disadvantaged and insecure circumstances is to deliberately encourage “bridging social capital” (Kim, Subramanian, & Kawachi, 2006), whereby families and children growing up in more optimal conditions can be trained in beneficial actions (O’Connor et al., 2016; Toumbourou, 2016). Through family home visiting programs, prosocial volunteers and professionals have been trained to reduce the intergenerational transfer of ineffective or harmful childrearing practices by providing targeted assistance through home visits to vulnerable mothers during pregnancy and through the early years of parenting (e.g., Eckenrode et al., 2010). These programs are designed to ensure that conditions for the healthy development of the child are met by provision of support and parenting advice to mothers who may be vulnerable because of problems including poverty, low education, disability, substance abuse, and health and mental health problems.

Meta-analyses of high-quality longitudinal evaluation studies show that home-visiting support to disadvantaged and vulnerable mothers from before they give birth increases the likelihood that the mother’s children will not require special education assistance (effect size [ES: a measure of change in a population expressed as a proportion of the standard deviation] .29) and will successfully graduate from secondary school (ES .10; see Aos et al., 2011, Technical Appendix 1, p. 72). These programs can guide prosocial community members to deliver beneficial actions that reduce threats to vulnerable children’s physical development in areas such as parental substance use and child neglect and abuse. They also promote the early neurocognitive development required for beneficial action by encouraging secure social attachments and enhancing the foundations for consequential thinking through healthy physical development and early learning experiences.

Preschool Influences on Beneficial Action

Education is critical to assisting children to move from altruistic motivation to beneficial action. Hence, in efforts to encourage beneficial action it is important to ensure optimal developmental pathways into education. In what follows selected examples of preschool programs that support the development of beneficial action are presented.

Children’s readiness for school tends to be highly influenced by preschool experiences in the family and in playgroups and preschool services. Preschool experiences give children the opportunity to develop neurological infrastructure and creativity that underlies learning through play; to become socialized into the requirements of education; and to develop a range of cognitive, social, and other skills. Two early childhood strategies that show evidence in systematic reviews of well-designed evaluations (Nores & Barnett, 2010) of improving children’s academic readiness and intelligence are (a) ensuring preschool education opportunities and (b) stimulating academic interest through programs such as reading in the home. The best results occur when these interventions are combined (Nores & Barnett, 2010).

Early School Influences on Beneficial Action

The entry to school is an important time of transition that can increase the development of school bonding and academic skills, while also offering the potential for training in prosocial behavior and beneficial action. In the following text a selected group of effective programs are described.

Peer tutoring programs (e.g., Greenwood & Terry, 1993) offer opportunities for students to implement prosocial behavior and to develop beneficial action skills in mentoring and teaching their peers. These programs have the potential to actively disrupt the primitive tendency for children to form exclusive peer social groups. Meta-analyses of high-quality longitudinal evaluation studies show these programs benefit future academic progress as indicated by academic test scores for both the tutor and tutee (ES .22; see Aos et al., 2011, Technical Appendix 1, p. 115).

The Good Behavior Game (GBG) has been carefully designed to provide a feasible method for introducing a positive classroom discipline system and is typically delivered in the first 3 years of school (e.g., Witvliet, van Lier, Cuijpers, & Koot, 2009). Classroom behavior problems in early primary school can increase aggressive peer behavior, decrease school bonding, and trigger early pathways to behavior problems such as violence and aggression. GBG is a positive discipline program initiated with teachers trained to use classroom democracy practices to achieve student agreement on classroom rules for behavior. The classroom student population is divided into groups that compete to achieve rewards for supporting their groups’ collective compliance with classroom rules. Making the group accountable for behavior management increases norms to comply with class behavior rules and offers opportunities and rewards for prosocial assistance to peers, disrupting primitive tendencies toward exclusive peer social groups. Meta-analyses of high-quality longitudinal evaluation studies (Aos et al., 2011, Technical Appendix 1, p. 153) show that the GBG reduces the development of antisocial behavior (ES .25) and increases school graduation (ES .08).

Secondary School Influences on Beneficial Action

The quality of secondary school experience has also been shown to have a lasting impact on adolescent development, potentially improving rates of secondary school attainment and completion, increasing prosocial behavior and beneficial action, and reducing antisocial behavior. During a young person's secondary school years, opportunities can be provided for prosocial adults to engage in beneficial action strategies required to effectively mentor adolescents. These years can also provide opportunities for adolescents to be trained to volunteer for beneficial action programs.

Youth mentoring programs include school- and community-based programs such as Big Brothers/Big Sisters. Typically, an adult volunteer is matched to an adolescent who has developmental problems such as antisocial behavior. The mentor is trained to support the adolescent with activities and guidance. Meta-analyses of high-quality longitudinal evaluation studies (see Aos et al., 2011, Technical Appendix 1, p. 160) reveal that youth supported by mentoring show improved school attendance (.08), academic performance (.10), high school graduation (.09), and reduced crime (.07).

The emergence of international plans to eliminate severe global poverty (United Nations, 2008, 2015) has led some youth-serving organizations to encourage a movement wherein young people are supported to volunteer and provide service in areas that can be measured against this ambitious plan (Obeng-Odoom, 2010). In addition to building international social capital (O'Connor et al., 2016), adolescents who volunteer and engage in civic action are more likely to experience positive youth development outcomes (Hawkins et al., 2011) and positive physical health (Schreier et al., 2013).

Population Mechanisms in the Development of Beneficial Action and Increasing Freedom

The sections that follow overview the theoretical mechanisms underlying the development of beneficial action. The first mechanism is through effective parent and community actions to assist the child to achieve healthy physical development and secure attachments. By ensuring physical conditions for healthy child development (Center on the Developing Child, 2010), encouraging secure bonding to prosocial adults (Catalano & Hawkins, 1996), and enabling early learning experiences (Center on the Developing Child, 2010), parents and community members are critical in setting the foundation for beneficial action in the earliest childhood years.

In addition to continuing the developmental tasks of earlier periods, the preschool period can increase opportunities for the child to engage in creative play and to enjoy effective early learning experiences that in turn improve readiness for school (Nores & Barnett, 2010). By providing effective preschool opportunities, parents, preschool staff, and community members can encourage prosocial school bonding (Catalano & Hawkins, 1996) and academic competencies (Nores & Barnett, 2010) in preschool children that are important foundations for the development of beneficial action.

From the time the child first enters school, the development of beneficial action is influenced by both adults outside the family (such as teachers) and peers. Through this period, the develop-

mental tasks of earlier periods continue and are increasingly carried out with the support of teachers. A key mechanism for the development of beneficial action in children introduced in this period is positive peer socialization (Catalano & Hawkins, 1996; Dishion & Dodge, 2005). Programs such as the GBG in the early school years (Witvliet et al., 2009) offer the prospect of challenging primitive tendencies for peer social groups to form hostile divisions, while also encouraging group moral reasoning and problem solving. Well-managed school environments integrate the diversity of students thereby building foundations in social trust (O'Connor et al., 2011). By encouraging the active contribution of children in the design and implementation of discipline policies, a foundation is set for the development of moral reasoning (Battistich, Watson, Solomon, Schaps, & Solomon, 1991). School policies that use exclusion to address student offenses increase the incidence of antisocial behavior (Hemphill et al., 2012) and reduce opportunities for offenders to learn through effective consequences and for school communities to build competencies to care for deviant individuals and groups (Hemphill et al., 2012). Well-managed school environments and community experiences through the school years build favorable attitudes toward and skills in consequential knowledge and the ability to competently care for out-groups. In this way, experiences through the school years provide important foundations for the development of beneficial action.

System Contributors and Situational Enablers of Beneficial Action

Given that cognitive complexity is a major barrier to implementing prosocially motivated behavior, institutions that synthesize and disseminate the conclusions of consequential knowledge and provide guidance and training in beneficial action strategies are important situational enablers. The Cochrane and Campbell Collaborations and the Washington State Institute models outlined earlier are examples of situational enablers. The United Nations Development Goals provide a further example as to how consequential knowledge can be synthesized to form agreed-upon human development targets that are monitored with valid indicators across nations internationally (United Nations, 2008, 2015).

Communities That Care (www.communitiesthatcare.org.au) is an internationally applied model that organizes and disseminates knowledge of effective strategies from the child development and prevention sciences at a community level (Hawkins et al., 2008, 2009). The Communities That Care approach is organized around the Social Development Model (Catalano & Hawkins, 1996) and provides training and support to increase community organizational capacity to improve local conditions for healthy child and youth development. The model uses a public health approach to encourage increased investment in evidence-based strategies (Greenberg et al., 2005). Evidence from large quasi-experimental (Greenberg, Feinberg, Brendan, Gomez, & Osgood, 2005) and randomized trials (Hawkins et al., 2008, 2009) has shown the model is an effective method of increasing investment in evidence-based prevention programs and in this way for increasing population rates of school achievement (Feinberg, Jones, Greenberg, Osgood, & Bontempo, 2010) and for reducing youth alcohol and drug abuse and antisocial behavior (Hawkins et al., 2009). The

Communities That Care process provides a framework that can support the wider implementation of beneficial action.

Implications for Research and Practice in Developmental Systems

As beneficial action theory is based on the merging of developmental and population-level health sciences, the predictions of the theory have important implications for life-course development within human population systems (developmental systems). The sections that follow detail a number of testable predictions for achieving harmonies within developmental systems. *Harmony* in this context refers to the optimization of environmental conditions for healthy human development and the fit of healthy developing individuals in contributing their capacities to global population freedom. Harmony in developmental systems has important implications for reducing problems and pathology in human development.

The study of individual differences in personality and behavior are fundamental areas of investigation in the psychology of human development, health and mental health, and groups and organizations. Knowledge of individual differences has been applied in psychology to define strengths that individuals can apply in activities that are personally and socially meaningful (Peterson & Seligman, 2004) and to contribute to team productivity (Lok, 2012). Beneficial action theory makes important predictions about the associations between individual psychological fit and the achievement of harmonies in developmental systems.

Beneficial action theory aligns with virtue ethics theories (Fowers, 2012) in accepting that a healthy developing human being is altruistic. Beneficial action theory argues that at higher levels of human development, healthy brain states emerge that are associated with the individual qualities that progress human freedom including the ability to act on complex consequential knowledge and constructive social emotions including empathy, trust, and compassion. As outlined in earlier sections, antisocial behaviors and related emotions have health and social costs for individual and population freedom. The next section examines how beneficial actors can seek to increase population freedom.

Principle 3 of beneficial action theory suggests that one way of increasing human freedom is to encourage high rates of consequential scientific knowledge by building effective education systems and ensuring access to scientific knowledge syntheses. There is good evidence from randomized trials that school organization strategies such as the Seattle Social Development Program (Hawkins et al., 1999) can improve teacher and school effectiveness leading students to experience increased school bonding. These effects in turn lead to improved educational achievement, better health, and upward economic mobility (Hawkins et al., 2005). Investment in evidence-based efforts to increase education at a global population level has also been shown to lead to economic improvements over time at a whole population level (Sachs, 2011; United Nations, 2014).

Principle 4 aligns with international efforts to establish evidence-based strategies to address global threats such as climate change and destruction of the natural environment (United Nations, 2014). Principle 4 suggests new directions to engage in socially and emotionally competent interactions with enemies. Modern battles with terrorism will not be won simply through

increased investment in traditional warfare but by investments in understanding and preventing the developmental experiences that motivate terrorism. Beneficial action programs encourage advantaged individuals to work and volunteer internationally to assist ethnic minority, disadvantaged, and remote families and communities to optimize conditions for healthy child development, disseminate effective parent education, ensure effective educational practices, and to promote social and emotional competencies and social trust (Toumbourou et al., 2015). Principle 4 suggests that armies that refit their warriors for a different kind of battle to ensure the exposure of diverse children, mothers, families, and citizens to beneficial action policies that effectively promote consequential knowledge and social trust will make a critical contribution to winning the war on terror, while enhancing the morale, resiliency, and individual freedom of soldiers. Beneficial action theory provides novel predictions in suggesting the following:

Testable Prediction 1

The level of competence to care for out-groups combined with the level of adoption of consequential knowledge will predict the breadth of application of beneficial action and thereby determine the rate of increase in freedom of the global population.

Beneficial action operates to increase freedom within a population by encouraging conditions for healthy development and by reducing barriers and threats that can cause developmental problems and thereby reduce freedoms. The beneficial action delivered to a population is considered to be an important influence on the future developmental outcomes of children and young people within that population. The reverse proposition is well established that prosocial responses are reduced through prolonged exposure to and victimization by antisocial groups (e.g., Hemphill et al., 2011). A second important testable prediction of beneficial action theory can therefore be stated as follows:

Testable Prediction 2

The rate of child and adolescent developmental problems and antisocial behavior within a population will be directly determined by the extent to which adults in that population understand consequential knowledge, are competent in developing social bonds with out-groups, and adopt beneficial actions.

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